In the Claims:

1. (Currently Amended) A system for detecting a leak, comprising:

a submersible turbine pump adapted to draw fuel from an underground storage tank for delivery to a fuel dispenser, said submersible turbine pump comprising:

a power head containing a fuel flow area that receives the fuel from the underground storage tank for delivery to the fuel dispenser; and

a vacuum source;

a casing surrounding said power head, said casing comprising an interior space, said vacuum source fluidly connected to said interior space such that a vacuum is generated in said interior space; and

a pressure sensor coupled to said interior space to measure a vacuum level in the interior space.

2. (Original) The system of claim 1, wherein said vacuum source comprises a siphon line generated by a venturi within said power head.

3. (Original) The system of claim 1, wherein said vacuum source comprises a turbine pump positioned within a boom.

4. (Original) The system of claim 1, wherein said pressure sensor is positioned in said interior space.

5. (Original) The system of claim 1, further comprising vacuum tubing, said pressure sensor coupled to said vacuum tubing.

6. (Original) The system of claim 1, further comprising a sensing unit controller coupled to the pressure sensor to determine the vacuum level in said interior space.

7. (Currently Amended) The system of claim 1, further comprising a ~~tank monitor~~ control system that is electrically coupled to said submersible turbine pump wherein said submersible

turbine pump creates a defined initial threshold vacuum level in the interior space after receiving a test initiation signal from said tank monitor.

8. (Currently Amended) The system of claim 7, wherein said ~~tank monitor~~ control system generates a leak detection alarm if said submersible turbine pump cannot create said defined initial threshold vacuum level in the interior space.

9. (Currently Amended) The system of claim 1, further comprising a ~~tank monitor~~ control system that is electrically coupled to said submersible turbine pump, wherein said ~~tank monitor~~ control system is electrically coupled to said pressure sensor to receive the vacuum level in the interior space.

10. (Currently Amended) The system of claim 9, wherein said ~~tank monitor~~ control system determines if the vacuum level in the interior space has decayed to a threshold vacuum level from a defined initial threshold vacuum level.

11. (Currently Amended) The system of claim 10, wherein said ~~tank monitor~~ control system activates said submersible turbine pump to attempt to lower the vacuum level in the interior space back down to said defined initial threshold vacuum level if the vacuum level in the interior space decays to said threshold vacuum level.

12. (Currently Amended) The system of claim 11, wherein said ~~tank monitor~~ control system determines if the vacuum level in the interior space lowers to said defined initial threshold vacuum level within a defined amount of time.

13. (Currently Amended) The system of claim 12, wherein said ~~tank monitor~~ control system generates a leak detection alarm if said ~~tank monitor~~ control system determines that the vacuum level in the interior space does not lower to said defined initial threshold vacuum level within said defined amount of time.

14. (Currently Amended) The system of claim 9, wherein said ~~tank monitor~~ control system determines if a leak exists in the interior space by determining if the vacuum level in the interior space decays to a threshold vacuum level in a predetermined amount of time.

15. (Canceled).

16. (Original) The system of claim 9, further comprising a liquid detection sensor that is coupled to the interior space, wherein said liquid detection sensor detects if liquid is present in the interior space.

17. (Original) The system of claim 16, wherein said liquid detection sensor comprises a float.

18. (Original) The system of claim 1, wherein said casing is fluid tight.

19. (Original) The system of claim 5, further comprising a check valve located in said vacuum tubing.

20. (Original) The system of claim 19, wherein said check valve lies between said power head and a sensing unit to prevent ingress of fluid from the interior space to said power head.

21. (Original) The system of claim 5, wherein said vacuum tubing is positioned within the casing.

22-33. (Canceled).

34. (Previously Presented) The system of claim 5, wherein the vacuum tubing is coupled to the vacuum source.

35. (New) The system of claim 6, wherein the sensing unit controller is coupled to a control system.

36. (New) The system of claim 7, wherein the control system is a system comprised from the group consisting of a sensing unit controller, a tank monitor, a site controller, and a remote system.

37. (New) The system of claim 9, wherein the control system is a system comprised from the group consisting of a sensing unit controller, a tank monitor, a site controller, and a remote system.